

MITIGATION MEASURES

There are no significant impacts; therefore no mitigation measures are required under NEPA.

4.7 GEOLOGY AND SOILS

This section discusses the assessment of potential environmental impacts to geologic resources and soils during site preparation, construction, and operation of the expanded facility. Impacts to the geological, mineral, and soil resources at the site resulting from the Proposed Action are expected to be insignificant.

4.7.1 Impacts on Mineral Resources

The proposed action would have no adverse impacts on mineral resources under the site and presents no immediate or substantial conflicts with the existing Utility Right-of-Way Grant of Easement or MOU. However, if the moratorium set forth in the MOU were not extended after the defined termination date, new buildings and facilities would limit surface access in a few locations. This loss of access would not be considered a significant impact because it would represent a very small proportion of the area available for future mining and these features could be removed if the site is decommissioned.

4.7.2 Impacts to Geological Resources and Soils

Resources such as concrete aggregate, crushed rock, and asphalt would be required during construction at the expanded facility. These materials could easily be obtained through commercial sources.

Construction or operational activities under the Proposed Action would not precipitate seismic activity in the vicinity of the site since there would be no injection of fluids. Excavation for new structures would probably not occur below the alluvial surface, approximately 40 feet deep, minimizing the need to blast for construction purposes.

The relatively flat terrain at the site is not physically predisposed to the occurrence of landslides that could be exacerbated by precipitation on surfaces exposed or denuded as a result of construction activities (see Section 4.6 Water Resources). There would be some loss of soils due to the physical alteration of the existing soil profile. However, the nonproductive attributes of most of the site's soils preclude agricultural productivity, therefore the loss of these non-productive soils would be insignificant.

The impacts to land use, loss of vegetation and habitat are described in Sections 4.1 and 4.8. Impacts to water drainage and water erosion are described in Section 4.6.

4.7.3 Impacts of the No Action Alternative

The No Action Alternative would result in no impacts to geological resources. Minor impacts to soil resources from ongoing site activities would be expected.

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4.8 BIOLOGICAL RESOURCES

NREL has extensive programs, policies and practices designed to avoid, minimize and mitigate impacts to the biological resources of the site. These efforts range from designation of formal conservation management areas covering sensitive locations to detailed efforts to restore disrupted areas and avoid noxious weed invasion. NREL's programs, policies and practices are referenced, where appropriate, in the following discussions.

4.8.1 Vegetation Impacts

Impacts to native vegetation can occur in three ways: as direct impacts, secondary impacts, or as cumulative impacts. The direct loss of native vegetation by construction or other disturbance may be either permanent or temporary. Secondary impacts to native vegetation may occur due to noxious weed invasion, or as changes in vegetation types due to changes in runoff, shading, etc. Cumulative impacts are the additive impacts resulting from past, present, and planned future activities from the project or other reasonably foreseeable projects.

The activities described for the Proposed Action would result in a direct, but temporary and insignificant loss of grassland habitat. Site development would disrupt site soils and vegetation during normal operations, turbine modification and maintenance activities and related construction work. However, NREL's revegetation policies would mitigate these impacts, including incremental losses of tallgrass prairie species.

Temporarily impacted lands, due to land clearing and disturbance from construction activities, have an increased susceptibility to noxious weed invasion. Weeds such as diffuse knapweed, Canada thistle, hoary cress, leafy spurge, and musk thistle occur on the site and are among the ten most widespread noxious weeds in the State of Colorado. The potential spread of these and other noxious weeds found at NWTC into disturbed areas represents secondary impacts as a result of the Proposed Action. NREL, understanding the potential for adverse effects caused by noxious weed spread, actively manages weeds on-site through NREL's aggressive Weed Control Program.

Although the Proposed Action represents a loss of grassland habitat, the cumulative effect of this loss is minimal due to protection of this habitat type on-site in conservation management areas and the widespread existence of grasslands on the adjacent RFETS and surrounding areas.

4.8.2 Wetland Impacts

The northern pipeline option described in the Proposed Action may result in direct and temporary loss of wetland habitat at wetlands in the drainage way along U.S. Highway 93. It is unknown at this time, how much acreage would be directly impacted by Option 1, but it is likely to be less than 1/10th of an acre. There are no wetlands involved in the Option 2 pipeline route.